

Patent Claims

1. Device for testing electric motors, in particular fan motors, for functionality, thereby characterized, that it includes an antenna for receiving magnetic alternating fields, a unit for analysis of the received signals for signal components in the frequency range of the rotation value of electric motors or as the case may be their harmonics and an indicator unit for signaling functionality.
2. Device according to Claim 1, thereby characterized, that the antenna includes one or more receiver coils.
3. Device according to Claim 2, thereby characterized, that the receiver coils are oriented in varying spatial directions.
4. Device according to one of the preceding claims, thereby characterized, that between antenna and unit for analysis an amplifier is provided for amplification of the received signal.
5. Device according to one of the preceding claims, thereby characterized, that the unit for analysis includes a filter unit for filtering the received signal.
6. Device according to Claim 5, thereby characterized, that the filter unit includes a bandpass filter with a bandpass width corresponding to the frequency range of the rotation

value of an electric motor or as the case may be the harmonics thereof.

7. Device according to Claim 5, thereby characterized, that the filter unit includes multiple switchable bandpass filters with bandpass widths corresponding to the frequency ranges of the rotation values of varying electric motors or as the case may be their harmonics.
8. Device according to Claim 5, 6 or 7, thereby characterized, that the filter unit includes a filter with a bandpass width of approximately from 1 Hz to 1 kHz, from 100 Hz to 1 kHz or as the case may be from 100 Hz to 10 kHz.
9. Device according to one of the preceding claims, thereby characterized, that the unit for analysis is adapted for evaluating the logarithmic received signal.
10. Device according to one of the preceding claims, thereby characterized, that the indicator unit is adapted to emit an optical and/or acoustic signal.
11. Device according to one of the preceding claims, thereby characterized, that it includes a portable housing.
12. Device according to one of the preceding claims, thereby characterized, that it includes an independent energy source, in particular a battery or a fuel cell system.
13. Device according to one of the preceding claims, thereby characterized, that an analog/digital converter is provided

subsequent to the antenna and the unit for analysis of the received signal is a device for digital signal processing, in particular a microcontroller, signal processor or an ASIC.

14. Process for testing electric motors, in particular fan motors, thereby characterized, that by means of an antenna which receives electromagnetic alternating fields formed by an electromotor in operation, analyzes the received signals for signal components in the frequency range of the rotation value of electric motors or as the case may be their harmonics by means of a unit for analysis and, in the case of functionality, this is indicated via an indicator unit.